



MAINTENANCE TRACKING TOOL

PETTRACE800

Date:2023-10-16

Country: France	Site: SCL
Intervention:	Programmed maintenance: UBM/CBM <input checked="" type="checkbox"/>
Subsystems:	

PRE-MAINTENANCE

Registration Date: 2023-10-1300

Gas flow(sccm): 5.0

TPG Settings Verifications

	Low limit (x10-)	High limit (x10-)
Piranni 1 (TPG300 A1):	1.00E-1	1.00E-1
Piranni 2 (TPG300 A2):	7.00E-2	7.00E-2
Penning:	4.00E-5	8.00E-5

Notes

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Gauge number	Pressure (x10-) without gas	Pressure (x10-) with gas
A1 (mbar):		5.1e-2
A2 Under Range:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A2:		
B1 (mbar):	9.0e-8	1.2e-5

System software

Subsystem	Version
Master:	
ACS:	
Service System:	
Manager:	
Informix (only applicable to SUN-Master Station):	

Comments

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Paper Burn Before PM

Photos
There is not photographic evidence

VACUUM

TPG settings verifications

Date: 2023-10-16

Production gas flow: 5.0

Piranni 1 (TPG300 A1)

Pressure with gas	Low limit (x10-)	High limit
5.10E-2	1.00E-1	7.00E-1

Piranni 2 (TPG300 A2)

Under range	Pressure with gas	Low limit	High limit
<input checked="" type="checkbox"/>	0.00E+0	7.00E-2	7.00E-2

Penning

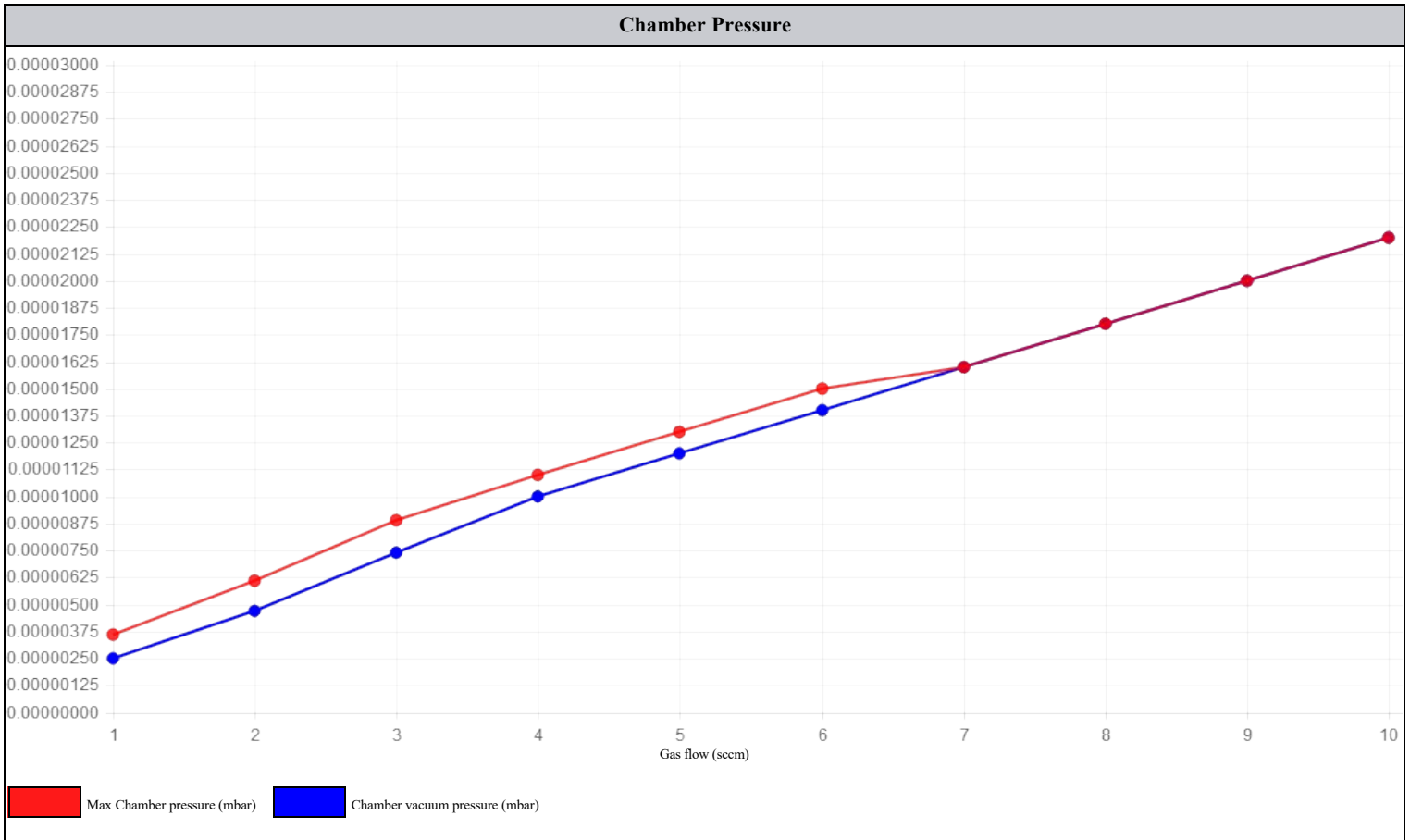
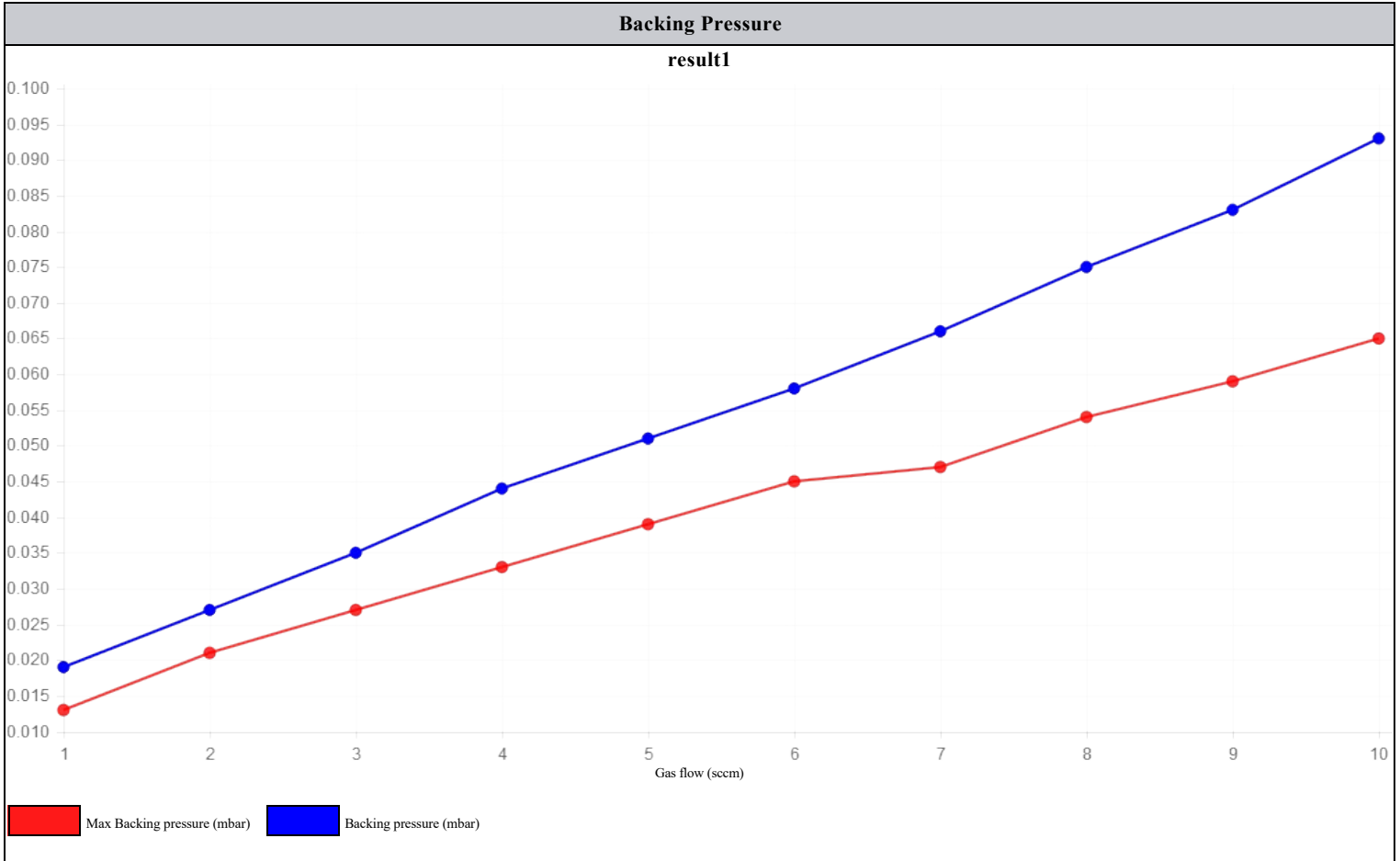
Pressure with gas	Low limit	High limit
1.20E-5	4.00E-5	8.00E-5

Notes

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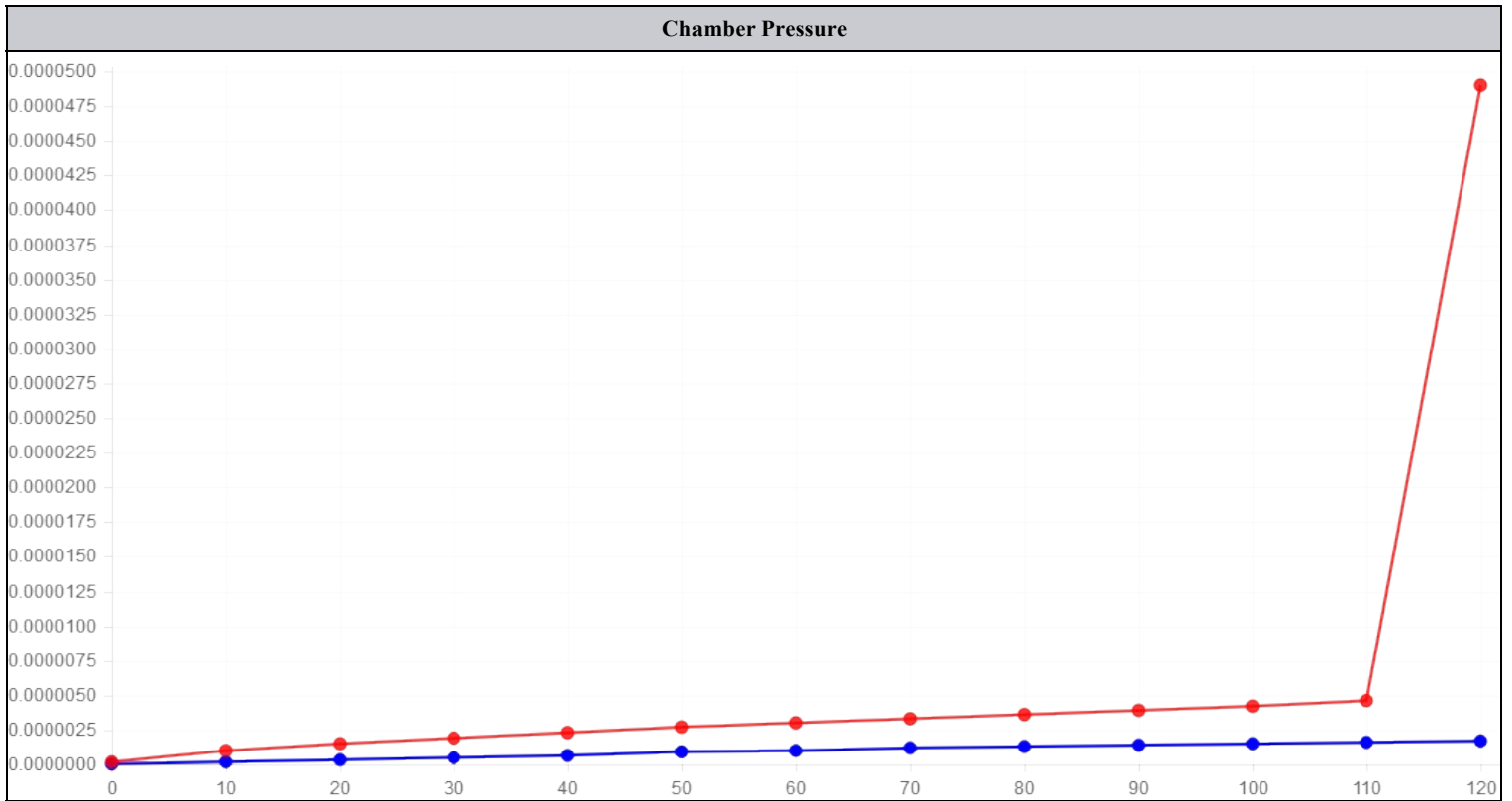
Vacuum MFC curve test

SCCM	Chamber pressure	Backing pressure
1	2.50E-6	1.90E-2
2	4.70E-6	2.70E-2
3	7.40E-6	3.50E-2
4	1.00E-5	4.40E-2
5	1.20E-5	5.10E-2
6	1.40E-5	5.80E-2
7	1.60E-5	6.60E-2
8	1.80E-5	7.50E-2
9	2.00E-5	8.30E-2
10	2.20E-5	9.30E-2



Vacuum leak test

Seconds since push standby	Chamber pressure	Max. Chamber pressure
0	3.00E-8	1.80E-07
10	1.90E-7	1.00E-06
20	3.40E-7	1.50E-06
30	5.00E-7	1.90E-06
40	6.50E-7	2.30E-06
50	9.20E-7	2.70E-06
60	1.00E-6	3.00E-06
70	1.20E-6	3.30E-06
80	1.30E-6	3.60E-06
90	1.40E-6	3.90E-06
100	1.50E-6	4.20E-06
110	1.60E-6	4.60E-06
120	1.70E-6	4.90E-06

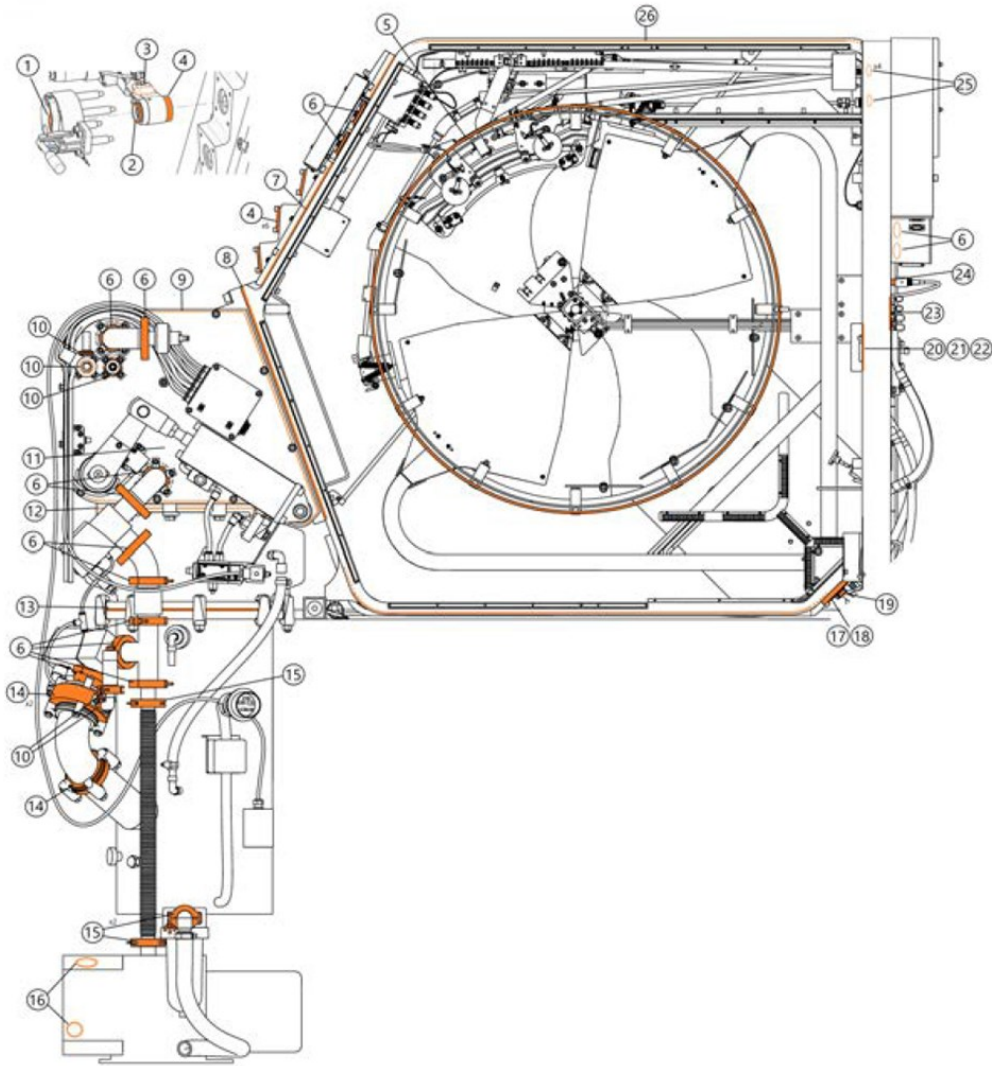


OtherTest

Name the test	He leakcheck
Test explanation	Vent the cyclotron. Connect the He leak detector to the penning exhaust. Start pumping with the machine. Wait vacuum is low enough and stable, and He concentration recorded low and stable. Apply He gas next to the seal you want to test and wait for detector response (between 30 and 60 minutes). If no increase of concentration, the seal is defective.

PETtrace800 O-Rings analysis

Pins

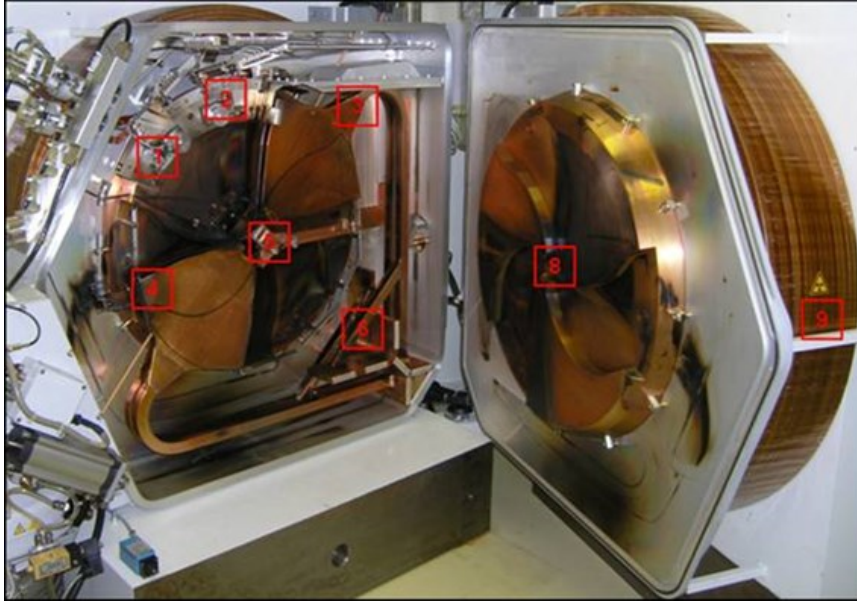


CHAMBER

Chamber Opening

Measure yoke play, adjust if needed: 0.0

Dose rate mapping (positions 1-9, [$\mu\text{Sv/h}$])



Position 1: At 36 cm from Extraction trolley	0.107
Position 2: At 36 cm from Carousel	0.115
Position 3: At 36 cm from Dee 2-stem junction	0.1
Position 4: At 36 cm from Deel upper corner	0.125
Position 5: At 36 cm from Central region	0.11
Position 6: At 36 cm from Stems coupler	0.107
Position 7: At contact with central region	0.14
Position 8: At 36 cm from magnet pole	0.09
Position 9: At contact of magnet coil	0.145

Photo documentation & visual inspection

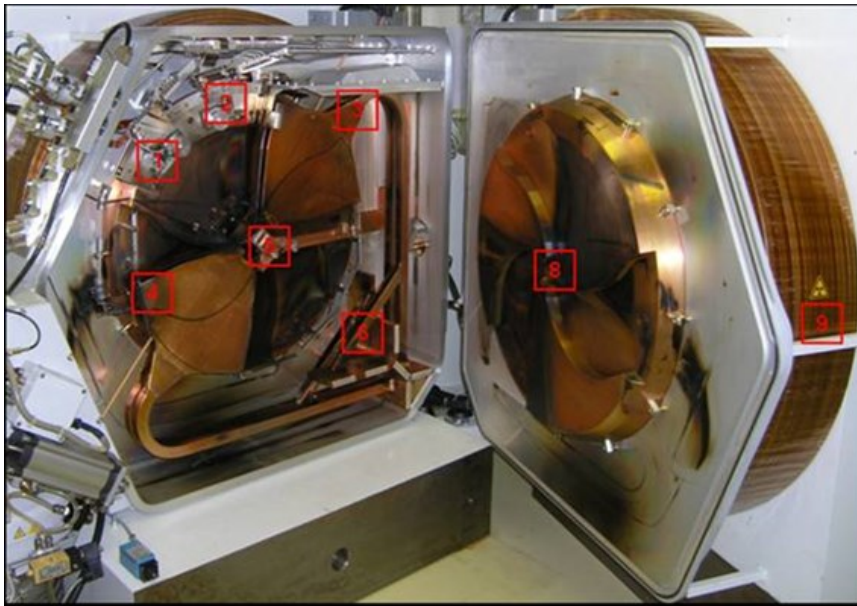
There is not photographic evidence

CHAMBER

Chamber Opening

Measure yoke play, adjust if needed: 0.0

Dose rate mapping (positions 1-9, [μ Sv/h])



Position 1: At 36 cm from Extraction trolley	0.107
Position 2: At 36 cm from Carousel	0.115
Position 3: At 36 cm from Dee 2-stem junction	0.1
Position 4: At 36 cm from Deel upper corner	0.125
Position 5: At 36 cm from Central region	0.11
Position 6: At 36 cm from Stems coupler	0.107
Position 7: At contact with central region	0.14
Position 8: At 36 cm from magnet pole	0.09
Position 9: At contact of magnet coil	0.145

Photo documentation & visual inspection
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There is not photographic evidence

Visual inspection of opening/closing	✓
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Visual inspection of tubing	✓
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Target port O-ring replacement	✓
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FlapsFlap 1

Calibrate flaps, record minimum and maximum motor current:

Minimum current [mA]	-99
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MaximumCurrentMA	94
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Record flap to dee distances for 0%, 50%, 100%

0% value [mm]	4.799999999999998
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50% value [mm]	12.5
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100% value [mm]	12.5
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Flap 2

Calibrate flaps, record minimum and maximum motor current:

Minimum current [mA]	-90
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MaximumCurrentMA	77
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Record flap to dee distances for 0%, 50%, 100%

0% value [mm]	4.5
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50% value [mm]	12.199999999999999
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100% value [mm]	12.199999999999999
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Central Region

Visual inspection of flip-in probe	<input checked="" type="checkbox"/>
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Measure flip-in probe position (a,b,c,d,e)

A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
52.799999999999997	47.700000000000003	47.399999999999999	100.0	0.0

Dismount ion source and mount dummy ion source	<input checked="" type="checkbox"/>
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Measure central region distances (A, B, C, D) [mm]

A [mm]	B [mm]	C [mm]	D [mm]
0.65000000000000002	0.25	0.25	1.2

Visual inspection and photo of H-puller	<input checked="" type="checkbox"/>
If needed: H-puller replacement	<input checked="" type="checkbox"/>

If needed: Adjustment of central region and record A, B, C, D again

If needed: Adjustment of central region and record A, B, C, D again	<input checked="" type="checkbox"/>
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A [mm]	B [mm]	C [mm]	D [mm]
0.59999999999999998	0.25	0.59999999999999998	1.2

If needed: Ion source maintenance or replacement	<input checked="" type="checkbox"/>
Install back ion source	<input checked="" type="checkbox"/>

Restore and record flip-in probe position

Restore and record flip-in probe position	<input checked="" type="checkbox"/>
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A [mm]	B [mm]	C [mm]	D [mm]
52.399999999999999	47.5	46.600000000000001	37.5

Pictures	
Image	Comments
CentralRegion_8.jpg	Old puller

Dees

Visual inspection of dees, internal and external baffles	<input checked="" type="checkbox"/>
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	Measure dee thickness	Measure dee height
A	34.0	47.10000000000001
B	34.39999999999999	75.70000000000003
C	33.70000000000003	47.20000000000003
D	33.39999999999999	46.29999999999997
E	33.5	74.40000000000006
F	34.70000000000003	47.29999999999997
G	34.39999999999999	74.79999999999997
H	33.60000000000001	73.79999999999997

Pictures	
Image	Comments

Verify tightness of dee- and stem screws	<input checked="" type="checkbox"/>
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Extraction

	✓
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Calibrate balance, record minimum and maximum motor current [mA]

	Calibrate balance, record minimum and maximum motor current	Calibrate extraction 1, record minimum and maximum motor current [mA]	Calibrate extraction 2, record minimum and maximum motor current [mA]
Minimum current [mA]	-104.0	-111.0	-97.0
Maximum current [mA]	108.0	129.0	98.0

Diagnostic system checks

Visual inspection of collimators and collimator cables	✓
Check collimator screws tightness	✓

Check collimator vertical opening for each collimator pair	
Check collimator vertical opening for each collimator pair	
Measure flip-in probe resistance	29.41

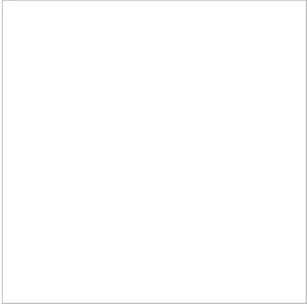
	Resistance Measurement	Insulation Measurement
Extraction 1	29.440000000000001	0.0
Extraction 2	29.559999999999999	0.0

Targets	
Comments	

Chamber Clean-up

Carousel repositioning

Reset foil counter	<input checked="" type="checkbox"/>
Install back carousels	<input checked="" type="checkbox"/>
Foil change test on each carousel	<input checked="" type="checkbox"/>

Full picture of vacuum chamber	
	

Chamber clean-up

Clean dees and magnet poles	<input checked="" type="checkbox"/>
Regrease door o-ring	<input checked="" type="checkbox"/>
Check for left items	<input checked="" type="checkbox"/>
Inspect RF finger contacts	<input checked="" type="checkbox"/>
Close magnet door	<input checked="" type="checkbox"/>

